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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Gerd Spalink

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EXAMINER

NGUYEN, DUNG X

ART UNIT

PAPER NUMBER

2631

13

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/602,511

Applicant(s)

SPALINK, GERD

Examiner

Dung X Nguyen

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on 14 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,8,9,11,18 and 19 is/are rejected.
- 7) ☒ Claim(s) 2-7 and 12-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Response to Arguments

1. Applicant's arguments filed on May 14, 2004 have been fully considered and are partial persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection(s) is made.

According to the arguments that White (US patent # 6,430,243 B1) does not teach the use of the polarity of the frequency error. However, White teaches in its abstract, "as such the symbol sign information is used to "correct" or "gate" the phase error." So the arguments for this subject matter are not persuasive.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 8 recites the limitation "that lock detector means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an

application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1 and 11 are rejected** under 35 U.S.C. 102(e) as being anticipated by Oura et al. (US patent # 6,038,267).

Regarding claim 1, Oura et al. discloses (figure 1):

- Blocks 10, 11, 12, 13, 14 corresponding to first phase error detecting means for detecting a robust estimate for the phase error of the received digital input signal and for generating and outputting a robust phase error signal representative of the robust phase error (column 4, lines 26 – 47 and column 6, line 21 to column 7, line 18);
- Blocks 15, 16, 17, 18 corresponding to second phase error detecting means for receiving the robust phase error signal from the first phase error detecting means and for deriving therefrom a frequency sensitive phase error signal that is inherently representative of the sign (polarity) of the frequency error (see column 6, line 21 to column 7, line 18); and the corresponding frequency sensitive phase error is used to reduce the frequency error with respect to the received digital signal (column 4, line 51 to column 5, line 5 and column 5, lines 50 – 67) to inherent enable locking to at least the carrier thereof.

Regarding claim 11, the limitations are analyzed in the same manner set forth as claim 1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

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matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1 and 11 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Kullstam et al. (US patent # 6,075,408), and further in view of White (US patent # 6,430,243 B1).

Regarding claim 1, Kullstam et al. discloses (figure 2):

- Blocks 12, 14, 15, 20, 22, 40 corresponding to first phase error detecting means for detecting a robust estimate for the phase error of the received digital signal and for generating and outputting a robust phase error signal representative of the phase error (column 5, lines 26 – 55);
- Block 24 corresponding to second phase error detecting means for receiving the robust phase error signal from the first phase error detecting means and for deriving thereof a frequency sensitive phase error signal is used to reduce the frequency error with respect to the received digital signal inherent enable locking to at least the carrier thereof.

Kullstam et al. differs from the instant claimed invention that it does not show the sign of the frequency error.

However, White discloses the use of the polarity (sign) of the frequency error (abstract, column 2, lines 14 – 15, and column 4, lines 13 – 22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Kullstam et al. and White to fulfill the limitations required by the instant claimed invention for improving the accuracy of the phase detection (column 2, lines 20 – 22 of White).

Regarding claim 11, the limitations are analyzed in the same manner set forth as claim 1.

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8. **Claims 8, 9, 18, and 19 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Oura et al. (US patent # 6,038,267), and further in view of Shibuya et al. (US patent # 6,490,010 B1).

Regarding claim 8, as followed by the limitations analyzed in claim 1, Oura et al. differs from the instant claimed invention that it does not show the average value of the phase error signals is beyond a threshold.

However, Shibuya et al. discloses (figure 12) that the step of generating and outputting a locking from phase error signal and/or an average value thereof (column 3, lines 51 – 57) is beyond a threshold (column 2, lines 19 – 27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Kullstam et al. and Shibuya et al. to fulfill the limitations required by the instant claimed invention for improving the communication system.

Regarding claim 9, as followed by the limitations analyzed in claim 8, Oura et al. further discloses (figures 1, 3, and 4) that the locking means is adapted to use the robust phase error signal and the valid robust phase error signal supplied by the first phase error detecting means (column 4, lines 36 – 48, column 6, line 20 to column 7, line 18).

Regarding claim 18, the limitations are analyzed in the same manner set forth as claim 8.

Regarding claim 19, the limitations are analyzed in the same manner set forth as claim 9.

Allowable Subject Matter

9. **Claims 2 –7 and 12 – 17 are objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Barman et al. (US patent 6,577,690 B1) discloses a clock recovery in multi-carrier transmission systems.

Ishigaki (US patent 4,888,564) discloses a phase-locked loop circuit.

Contact Information

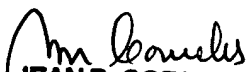
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (703) 305-4892. The examiner can normally be reached on Monday through Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (703) 306-3034. The fax phone numbers for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

DXN

May 27, 2004


JEAN B. CORRIELUS
PRIMARY EXAMINER
5/28/04